Series 3920HD
H.264 HDTV
IP67 Dome Positioning System

- HD 720p30 and 1080p30 Camera Options
- Optical Zoom up to 30x Power*
- Electronic Image Stabilization*
- Image Defog Capability*
- H.264/MJPEG Video Standards
- Web Server Configuration, Operation and Viewing
- Wide Range, Variable Speed, Smooth Positioning Movements
- Camera Presets, Tours and Sector/Privacy Zones
- Two Sensor Inputs, One Control Output
- Automated I/O Event Actions
- Sealed and Pressurized IP67 Ingress Protection
- -40°C to 60°C Operation
- NTCIP 1205 over IP Communication Support
- 120Vac or 24Vac Power Input
- Single Field Connector
- Pendent, Wall and Pole and Mounting Options
- ONVIF Profile S Compliant

CohuHD's 3920HD dome positioning system combines crystal clear HD image quality, bandwidth efficient H.264 compression, smooth variable speed positioning and IP67 protection delivering the CohuHD quality and performance you expect!

The 3920HD includes a choice of 720p30 or 1080p30 HD cameras with up to 30x* optical zoom, delivering full frame rate HD images over the entire zoom range.

The built-in zoom capability enables up to 30x optical magnification in high definition and achieves quick subject tracking through its high speed auto focusing system. True day/night technology using a removable IR cut filter produces exceptional low light sensitivity down to 0.005 lx*.

For installations subject to wind or vibration, electronic image stabilization* assures a steady, clear image and enables the system designer to utilize existing bridge signs and traffic light poles for camera mounting.

The 3920HD includes defog* image processing, enhancing video performance in foggy conditions encountered in surveillance and traffic monitoring applications.

The 3920HD includes a variable hi-speed pan and tilt drive, with 360° continuous pan and +5 to -90° tilt. Fast positioning speeds result in 180° movements in less than 2.5 seconds.

Providing multiple video stream capability, the 3920HD delivers two independently configured H.264 streams or an H.264 with MJPEG or an H.264 with analog output.

Use of the IP and analog output allows integrating with analog based systems today while providing a smooth transition to HD Video over IP tomorrow.

The 3920HD provides a full function web server, allowing complete administrative and operator control capabilities. Administrative features include configuring network settings, user password assignments, setting video streaming properties, configuring camera imaging properties, defining presets, tours and assigning camera ID labels.

The 3920HD is designed to operate in harsh weather with its IP67 pressurized enclosure protection. This eliminates the effects of water intrusion, pollutants and corrosives and is ideal for applications in marine, coastal areas, traffic monitoring, and other areas of high contamination.

Cohu delivers years of clean, reliable images and backs it with a world class two year warranty.

* Camera Model Dependent

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Helios

Camera

(See Camera Specifications Table, next page)

Pan/Tilt Positioner

MOVEMENTS
Pan Range: 360° Continuous Rotation
Pan Speed: 0.1° to 80°/sec
Tilt Range: 5° to -90° speed [Continuous tilt with image flip and rotation at -90°]
Tilt Speed: 0.1° to 40°/sec
Preset Speed: < 2.5 seconds for 180° movement

ACCURACY
Repeatability: +/- 0.1°
Resolution: +/- 0.1°

PRESETS
64, Includes pan, tilt, zoom, focus coordinate

TOURS
8, Includes 32 presets with individual dwell per preset

SECTOR ZONES
16, Includes left/right boundary, enabled/disabled state

PRIVACY ZONES
8, Each zone Includes left/right boundary, enabled/disabled state

IP Video

VIDEO STREAMS
Two (2) individually configurable streams

VIDEO CODECS
H.264 and MJPEG

VIDEO CONFIGURATIONS
H.264 + H.264
H.264 + MJPEG
H.264 + Analog Video
MJPEG + Analog Video

VIDEO RESOLUTIONS
Stream 1: 1080p [1], 720p, D1[1]
Stream 2: D1, CIF

VIDEO STREAM FRAME RATES
30, 15, 7.5, 6, 5, 3.75, 3, 2, 1.875, 1 [2]

VIDEO STREAM DATA RATES (Mbps)
Stream 1: 8, 6, 4, 3, 2, 1.5, 1, 0.512, 0.256
Stream 2: 2, 1.5, 1, 0.512, 0.256 [3]

IP VIDEO LATENCY
Four (4) video frames (133 msec) [4]

Video Streaming Connections

RTSP/RTP
Eight (8) H.264, Eight (8) MJPEG

RTSP INTERLEAVE
Eight (8) H.264, Eight (8) MJPEG

RTSP/SDP MULTICAST
Eight (8) H.264, Eight (8) MJPEG

HTTP/SDP MULTICAST
Unlimited, H.264 or MJPEG

HTTP TUNNELING
Two (2) H.264, Ten (10) MJPEG

MJPEG PUSH (HTTP)
Ten (10) MJPEG

MJPEG PULL (HTTP)
Ten (10) MJPEG

MPEG2 TS
Unlimited, H.264 or MJPEG

Video On-Screen Display (OSD)

IP VIDEO

GENERAL
Up to Four OSD elements are selectable for inclusion in the camera's two IP video streams. (Note: Three elements maximum on a single stream. The OSD elements display on top or bottom of image, on right side of video. The logo element displays on top or bottom of image on left side.

OSD ELEMENTS
Camera Title: Up to 24 characters
Preset ID: Up to 24 characters
Sector Zone: Up to 24 characters
Position: Azimuth and Elevation
Time/Date: 24 Hour Format, Time Zone
Logo Display: .bmp format, 96 x 96 pixels maximum, in multiples of 32 pixels

ANALOG VIDEO

OSD ELEMENTS
Camera ID: Up to 24 characters
Preset ID: Up to 24 characters
Sector Zone: Up to 24 characters
Position: Azimuth and Elevation

Network Interface

SECURITY/AUTHENTICATION
Four (4) Access Levels [Admin, Privilege, User, Guest]

WEB SERVER FUNCTIONS
Configuration: Network, video stream, OSD, presets tours, security settings and upgrades
Control: Pan/Tilt, Lens, Presets, Tours, Auxiliary controls
Viewing: ActiveX control download from camera to client PC. Requires IE8 or newer

MEDIA PLAYER SUPPORT
Browser: Internet Explorer 8.x or newer
Media Player: VLC, QuickTime or any media player compliant with RFC 2326, 3984, 3550, 2435, ISO/IEC 13818-1

NETWORK INTERFACE
Format: Ethernet: 802.3u (100BASE-TX)
Network Protocols: TCP, UDP, IP IGMP, ICMP, DNS, DHCP, RTP, RTSP, NTP, IPv4, HTTP, ARP, ONVIF Profile S

CAMERA PROTOCOLS OVER IP
ONVIF Profile S, NTCIP 1205, Cohu T

Analog Interface

VIDEO
NTSC or PAL, using full 16:9 image compressed into 4:3 aspect ratio. Stream 2 must be configured for analog video.

SERIAL PAN/TILT/ZOOM CONTROL
Format: RS422, 4 wire half duplex, 9600 baud
Protocols: Cohu

Event Management

INPUT TRIGGERS
User Command
Periodic Timer

OUTPUT EVENTS
Camera Preset Activation
FTP Snapshot

Electrical

INPUT VOLTAGE
120 Vac or 24 Vac (Model dependent)
Line Variation: 120Vac Complies with Nema TS2 para 2.1.2

POWER
40 W, 110 W with Heater ON

Mechanical

CONSTRUCTION/FINISH
Powder coated aluminum. External parts corrosion protected with stainless steel fasteners.

WEIGHT
14.0 lbs (6.3 kg)

DIMENSIONS
11.0"D x 13.8"H [281 mm x 349 mm]

CONNECTOR
18 pin MS, p/n 1310230-011

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Camera Option Specifications

Function	720p30 x18	720p30 x30	1080p30 x20
Sensor	1/3" CCD	1/3" CCD	1/3" CMOS
Scanning	Progressive	Progressive	Progressive
Pixel Array	1296 x 966	1296 x 966	2096 x 1097
Resolution	1280 x 720	1280 x 720	1920 x 1080
Frame Rate	30 fps	30 fps	30 fps
Camera Format	Day/Night (Removable IR Cut)	Day/Night (Removable IR Cut)	Day/Night (Removable IR Cut)
Day/Night Modes	Auto, Color, Mono	Auto, Color, Mono	Auto, Color, Mono
Sensitivity	See Sensivity Chart	See Sensivity Chart	See Sensivity Chart
Zoom Lens	18x, 4.7 to 84.6mm	30x, 4.4 to 132mm	20x, 4.7 to 94mm
Aperture	f1.6 -> f2.8	f1.4 -> f4.6	f1.6 -> f3.5
HAFOV	55.2° to 3.2°	62.9° to 2.2°	55° to 2.9°
Focus	Auto / Manual [Near, Far]	Auto / Manual [Near, Far]	Auto / Manual [Near, Far]
Iris	Auto / Manual [Open, Close]	Auto / Manual [Open, Close]	Auto / Manual [Open, Close]
Digital Zoom	Not Available	2x	Not Available
Image Stabilization	Not Available	Off/On [5 Hz or 10 Hz]	Not Available
Dynamic Range Mode	On/Off	On/Off	On/Off
Back Light Comp Mode	On/Off	On/Off	On/Off
Shutter/Integration	1/4 -> 1/10,000	1/4 -> 1/10,000	1/2 -> 1/30,000
Defog Mode	Not Available	Off/On [3 Levels + Color Saturation Adjust]	Not Available

Camera Option Sensitivity

720p30 x18 Camera	Video Level	Mode	Shutter	Aperture
1.8 lux (0.18 fc)	50 IRE	Color	1/60	f1.6
0.74 lux (0.074 fc)	30 IRE	Color	1/60	f1.6
0.18 lux (0.018 fc)	50 IRE	Mono	1/60	f1.6
0.02 lux (0.002 fc)	30 IRE	Mono	1/4	f1.6

720p30 x30 Camera	Video Level	Mode	Shutter	Aperture
0.5 lux (0.05 fc)	50 IRE	Color	1/60	f1.4
0.3 lux (0.03 fc)	30 IRE	Color	1/60	f1.4
0.05 lux (0.005 fc)	50 IRE	Mono	1/60	f1.4
0.005 lux (0.0005 fc)	30 IRE	Mono	1/4	f1.4

1080p30 x20 Camera	Video Level	Mode	Shutter	Aperture
1.7 lux (0.17 fc)	50 IRE	Color	1/60	f1.6
0.8 lux (0.08 fc)	30 IRE	Color	1/60	f1.6
0.3 lux (0.03 fc)	50 IRE	Mono	1/60	f1.6
0.04 lux (0.004 fc)	35 IRE	Mono	1/4	f1.6

Field Connector Pin-Out

PIN	SIGNAL
A	Video Ground
B	Spare / 24 VAC HI
C	Alarm1 In/Out
D	Ethernet Tx+
E	Ethernet Tx-
F	Ethernet Rx+
G	AC GND
H	Ethernet Rx-
J	Alarm2 In/Out
K	Alarm3 In/Out
L	Video Signal
M	RS-422 Rx+
N	RS-422 Rx-
P	Alarm Gnd
R	RS-422 Tx-
S	RS-422 Tx+
T	115 VAC / 24VAC LO
U	115 VAC HI / SPARE

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Environmental

TEMPERATURE
-40°F to 140°F (-40°C to 60°C)
Note: Minimum operating temperatures are with a 2 hour warm-up.

HUMIDITY
Humidity; 0-100% N.C per MIL-E-5400T, paragraphs 3.2.24.4

INGRESS/PROTECTION STANDARDS
IP67, Pressurized to 3.5 psi with dry nitrogen

SALT SPRAY PROTECTION
Compliant to ASTM-B117

VIBRATION
Compliant to Nema TS2 para 2.1.9, 2.23, 2.28

SHOCK
Compliant to Nema TS2 para 2.1.10, 2.24

CORROSION
Per Nema 250-2003, paragraphs 5.10

Certifications

FCC Class A

Shipping Information

Weight: 18 lbs (8.2 kg)
Volume: 15" x 15" x 20" (381mm x 381mm x 508mm)

Accessories

MOUNTS
Wall: 7411420-001
Pole: 8518-2

MATING CONNECTOR
MS Type: 1310230-011

CABLES
CA252 Series: 120Vac, MS connector
CA255 Series: 24Vac, MS connector

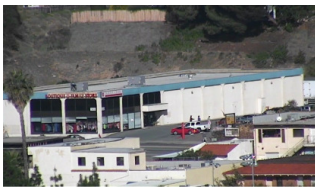
Ordering Model Numbers

HD24-1000	Dome System, 24Vac 720p30 x18 Camera
HD24-2000	Dome System, 24Vac 1080p30 x20 Camera
HD24-3000	Dome System, 24Vac 720p30 x30 Camera
HD25-1000	Dome System, 120Vac 720p30 x18 Camera
HD25-2000	Dome System, 120Vac 1080p30 x20 Camera
HD25-3000	Dome System, 120Vac 720p30 x30 Camera

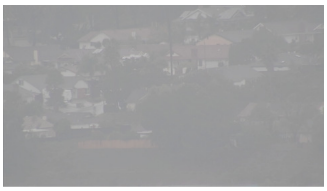
Defog Performance (720p 30x Camera)

LIGHT FOG - DEFOG OFF

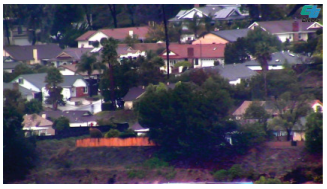
LIGHT FOG - DEFOG ON



HEAVY FOG - DEFOG OFF



HEAVY FOG - DEFOG ON



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